

**AMENDMENTS TO CLAIMS**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims**

- 1 – 20 (cancelled)
21. (currently amended) A wet and dry weather water disinfection system for reducing pollutants in storm water runoff comprising[,]:  
a disinfecting chemical dispenser located proximate in-line to a storm water management infrastructure where said disinfecting chemical dispenser is configured to add a disinfection disinfectant chemical into storm water flowing through said storm water management infrastructure;  
a sensor configured to measure storm water pollution characteristics attributable to said water flowing through said storm water management infrastructure;  
a control unit that controls an amount of said disinfection disinfectant chemical added to said water flowing through said storm water management infrastructure based on said water pollution characteristics,  
~~— wherein said wet and dry weather water disinfection system is locatable in-line at a storm drain collection location.~~
22. - 53. (cancelled).
54. (currently amended) The wet and dry weather water disinfection system of claim 21 wherein said sensor to measure water pollution characteristics is located upstream of said disinfecting chemical dispenser.
55. (currently amended) The wet and dry weather water disinfection system of claim 21 further comprising a downstream sensor configured to measure said water pollution characteristics.

56. – 59. (cancelled)

60. (currently amended) A method for upstream storm water disinfection, comprising the steps of:

placing a portable disinfecting chemical dispenser adjacent to a storm drain collection location, said disinfecting chemical dispenser configured to add a disinfection chemical into storm water flowing through said storm drain collection location;

measuring water pollution characteristics attributable to said water flowing through said storm drain collection location through one or more at least one sensor[s];

determining an amount of disinfection chemical to add to said water flowing through said storm drain collection location based on said water characteristics by a controller connected to said portable disinfecting chemical dispenser; and

adding said amount of disinfection chemical from said portable disinfecting chemical dispenser to said water flowing through said storm drain.

61. (new) An automated in-line storm water disinfection system for reducing pollutants in wet and dry weather storm water runoff comprising:

A monitor for measuring flow rate of storm water runoff through a storm water management infrastructure;

A means for disinfecting storm water runoff;

A control unit located in-line to a storm water management infrastructure and electrically coupled to said flow rate monitor, said control unit electrically coupled to said disinfecting means and capable of dispensing disinfectant into storm water runoff in a dosage adjusted for

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said measured flow rate, whereby said flow rate may be measured for both wet and dry weather storm water runoff; and

At least one sensor coupled to said control unit for measuring water pollution characteristics attributable to said storm water runoff.

62. (new) The system of claim 61 wherein said disinfecting system comprises a mixing chamber.

63. (new) The system of claim 62 wherein said mixing chamber comprises a bypass unit for disinfection of storm water runoff during dry weather flow rate conditions.

64. (new) The system of claim 61 wherein said water disinfecting means is a chemical dispenser.

65. (new) The system of claim 61 wherein said water disinfecting means is a UV source; and wherein said at least one sensor is a UV spectrometer interfaced to said storm water runoff via a fiber optic cable.

66. (new) The system of claim 61 wherein said control unit adjusts said water disinfecting means automatically based on physiochemical properties of said storm water runoff as measured by said at least one sensor.

67. (new) The system of claim 61 wherein said control unit adjusts said water disinfecting automatically based on biological properties of said storm water runoff as measured by said at least one sensor.

68. (new) The system of claim 61 wherein said control unit adjusts said water disinfecting automatically based on hydraulic properties of said storm water runoff as measured by said at least one sensor.

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69. (new) The system of claim 61 wherein said at least one sensor is upstream of said disinfecting means to measure pre-treatment characteristics of said storm water runoff.
70. (new) The system of claim 61 wherein said at least one sensor is downstream of said disinfecting means to measure post-treatment characteristics of said storm water runoff.
71. (new) The system of claim 61 wherein said at least one sensor measures physiochemical properties of said storm water runoff;
72. (new) The system of claim 61 wherein said at least one sensor measures biological properties of said storm water runoff.
73. (new) The system of claim 61 wherein the at least one sensor is a sensor array.
74. (new) The system of claim 73 wherein said sensor array is a meteorological station coupled to said control unit via a communications link.
75. (new) The system of claim 74 wherein said meteorological sensor array provides dynamic data for adjusting the parameters of said control unit.
76. (new) An automated in-line wet and dry weather water flow disinfection system for disinfecting storm water runoff comprising:
  - An in-line flow rate monitor for measuring flow rate of storm water runoff through a storm water management infrastructure;
  - A chemical dispenser for dispensing at least one disinfectant chemical into a mixing chamber whereby said chemical disinfectant is mixed with storm water runoff;
  - A control unit located in-line to said storm water management infrastructure and electrically coupled to said flow rate monitor, said control unit further coupled to said

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chemical dispenser and capable of controlling the amount of said chemical disinfectant applied to said storm water runoff;

Said control unit further capable of automatically determining a dosage level of said based on said flow rate;

At least one upstream sensor coupled to said control unit to provide feedback to said control unit regarding pre-treatment biological properties of said storm water runoff; and

At least one downstream sensor coupled to said control unit to provide feedback to said control unit as to post-treatment biological properties of said disinfected storm water runoff.

77. (new) The automated in-line wet and dry weather water flow disinfection system of claim 76 wherein said biologic properties further comprise the concentration of pathogenic microorganisms.